

REMARKS/ARGUMENTS

Claims 29-30, 36-37, 43-44, 48-50 and 76 are rejected under 35 U.S.C. 102(e) as being anticipated by Kawamura et al. (Kawamura, Pub. No.: US2003/0068581) of record. All of these claims, except claim 76, depend directly or indirectly from claim 29.

Claims 31-33, 38-39 and 51, all depend from claim 29, are rejected as obvious over Kawamura based essentially on the same reasons. Similarly, dependent claims 34-35 are rejected as obvious over Kawamura, with Kim et al cited as secondary art; claims 40-42 are rejected over Kawamura combined with Hannah; and claim 47 is rejected over Kawamura combined with MacQueen.

The Examiner states in bridging pages of 2-3 of the outstanding Office Action that "wherein the receptive layer ([0247] wherein hydrophilic region equals to respective layer) contains inorganic particles (see[0246 wherein respective layer is comprises by inorganic particle e.g. metal ion]) and the receptive layer [0247] is porous (wherein polyvinylpyrrolidone is porous see US 20090171406 in [0076] for examiner conclusion)." This reasoning is

relied on for each obviousness rejection of dependent claims as well as the anticipation rejection.

However, the Applicant disagrees in several points.

A. The Examiner states that the receptive layer contains inorganic particles (see [0246 wherein respective layer is comprises by inorganic particle e.g. metal ion]).

However, [0244] of Kawamura teaches as follows:

[0244] A pattern of a hydrophilic region is formed by the methods described in the above, and thereafter, a metal ion or a metallic salt is applied to the hydrophilic region, and the metal ion or a metal ion in the metallic salt is reduced to form a metallic thin film.

(underline added by the Applicant)

As described above, "a hydrophilic region" which equals to respective layer as the Examiner mentioned above is formed before applying "a metal ion or a metallic salt".

This means that the hydrophilic region of Kawamura, which corresponds to the respective layer as relied on by Examiner (mentioned above), does not contain "a metal ion or a metallic salt" itself. The "metal ion or metallic salt" is contained in the light-to-heat converting material.

After the "metal ion or metallic salt" is applied on the "hydrophilic region", the "metal ion or metallic salt" is then reduced to form a metallic thin film as described in [0244], thus no "metal ion or metallic salt" remains in the "hydrophilic region" after the reducing procedure.

Therefore, the "hydrophilic region" of Kawamura, which equals to respective layer, contains no "metal ion or metallic salt". Nor is a content of metal ion or metallic salt obvious. Combining Kawamura with the secondary art does not change this conclusion.

B. The examiner states in the first paragraph of page 3 of the outstanding Office Action that "and the receptive layer [0247] is porous ([0247] wherein polyvinylpyrrolidone is porous see US 20090171406 US 20090171406 in [0076] for examiner conclusion).

However, paragraph [0076] of US 20090171406 teaches as follows:

(US20090171406)

[0076] The biocompatible materials include synthetic polymers in the form of hydrogels or other porous materials, e.g., permeable configurations or morphologies, such as polyvinyl alcohol, polyvinylpyrrolidone and polyacrylamide.

According to the above disclosure, the above biocompatible materials can include "polyvinylpyrrolidone" possibly "in the form of other porous material". That does not mean that polyvinylpyrrolidone is inherently porous or porous as a certainty.

Further, the Examiner relies on Hendricks (US 2003/0091609) in paragraph [0037], to support the Examiner's reasoning that the synthetic polymer polyvinylpyrrolidone (PVP) is a porous material (see Response for Arguments at page 9 of the outstanding Office Action).

However, paragraph [0040] of Hendricks teaches as follows:

[0040] In one method according to the present invention, a porous polyurethane sheet material can be made by dissolving a polyether urethane in an organic solvent such as N-methyl-2-pyrrolidone; mixing into the resulting polyurethane solution a crystalline, particulate material like a salt or sugar that is not soluble in the solvent; casting the solution with particulate material into a thin film; and then applying a second solvent, such as water, to dissolve and remove the particulate material, thereby leaving a porous sheet. A portion of the particulate material may remain within the film. As a result, it is preferred that the solid particulate material be biocompatible.

Namely, the porous polymer film of Hendricks is produced by a special method as described above, which

means that polyvinylpyrrolidone (PVP) is not inherently porous.

On the other hand, an example of "a gas-tight polyvinylpyrrolidone film" (which cannot be a porous polyvinylpyrrolidone film) is disclosed in Col. 12, lines 53-56 of US4304838, as follows:

On this coating was provided an oxygen impervious layer by overcoating a 2% aqueous solution of polyvinylpyrrolidone (molecular weight about 40,000) to give a dried thickness of about 1 micron. After an image expo-

As described above, "the polyvinylpyrrolidone film of a dried thickness of about 1 micron" obtained by just coating a 2% aqueous solution of polyvinylpyrrolidone is "an oxygen impervious layer" which means a gas tight film and is not porous.

Thus, a polyvinylpyrrolidone film is not inherently or certainly a porous film, but itself is a dense film which can even be gas tight.

There would be many examples to use a polyvinylpyrrolidone film "in the form of a porous material", however, they do not mean that polyvinylpyrrolidone is inherently porous or porous as a certainty. The art provides a way to make it porous, but does not render its use obvious.

Accordingly, the polyvinylpyrrolidone taught in [0247] of Kawamura does not mean that Kawamura disclose or render obvious a "porous" hydrophilic region. The secondary art, even combined with Kawamura, does not render the use of porous polyvinyl pyrrolidone obvious.

According to the above arguments A and B, the method of manufacturing an electrical circuit claimed in claim 29 of the present application cannot be anticipated by Kawamura.

With respect to independent claim 76, the Examiner states in page 10 of the Office Action that "and since the layer is disclosed by Kawamura to contain (styrene-4-sulfonyl)sodium acetate salt, which itself contains the inorganic particles of sodium acetate salt, the Examiner finds that the material indeed contains sodium acetate salt, which are inorganic particles, hence Kawamura disclose the claimed limitation."

A (styrene-4-sulfonyl)sodium acetate salt is shown as M-29 in [0078] of Kawamura. It is clear that each sodium acetate group is individually bonded to a styrene-4-sulfonyl group as a pendant of the graft polymer. Therefore, these sodium acetate groups never aggregate with each other to form inorganic particles having a diameter

of, for example, 0.003 μm or more (claim 48 of the present application). Such an inorganic particle will be constitute of hundreds of or thousands of aggregated molecules of a salt. However, the sodium acetate group in (styrene-4-sulfonyl)sodium acetate salt never form such an aggregated particle, but individually pendent to the styrene polymer as a functional group ([0047]-[0082] of Kawamura).

Thus, (styrene-4-sulfonyl)sodium acetate does not mean inorganic particles.

Accordingly, "a weight ratio of the inorganic particles to the hydrophilic binder is between 2 : 1 and 20 : 1" is not disclosed by Kawamura.

Therefore, claim 76 is not anticipated or obvious over the cited reference.

Claims 75 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kawamura et al. (Kawamura, Pub.: US2003/0068581) of record in view of Kurihara et al. (Kurihara, US 6,340,443) of record.

As discussed above, Kawamura does not disclose or suggest the porous receptive layer of the present application. Adding Kurihara does not result in rendering the porous layer obvious.

Further, the Examiner states that "it would have been obvious to a person having ordinary skill in the art to use inorganic particles consisting of colloidal silica" teaching of Kurihara in the method for manufacturing an electrical circuit of Kawamura,"

However, silica is a very stable material which cannot be easily reduced to metallic silicon using a common reagent at ordinary temperatures, as is well known in the art [e.g. see below the excerpt from page 981, vol.21 of "Encyclopedia of Chemical Technology", 4th Ed., published by JOHN WILEY & SONS (1997)].

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as discrete, three-dimensional polyhedra based on the sharing of three oxygens per silicon atom (6). The relationship between the organopolysiloxanes and the silicates may be invoked to relate some structural and chemical properties of silicates to those of their organic analogues (7).

Properties

Reactions. At ordinary temperatures silica is chemically resistant to many common reagents. However, it undergoes a wide variety of chemical transformations under conditions such as high temperatures or when volatile products escape from the reaction. Reactivity is strongly dependent on the form, pre-....]

Accordingly, it is difficult to use colloidal silica particles of Kurihara (col.4, lines 45-60) as the "metal

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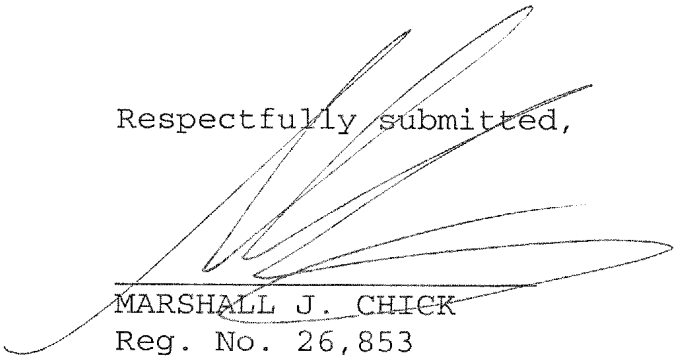
ion or metallic salt" of Kawamura ([0244]), which is reduced to form a metallic thin film.

According to the above discussion claim 75 is not obvious over a combination of Kawamura and Kurihara.

In view of the above, the rejections are avoided. Allowance of the application is therefore respectfully requested.

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